

ON-THE-JOB (OJT) PILOT TRAINING PROGRAM Manual 2015



**CREATING CAREER OPPORTUNITIES
IN
ARIZONA'S
HIGHWAY CONSTRUCTION INDUSTRY**



WELCOME – PROGRAM OVERVIEW

The purpose of the OJT Program is to address the underrepresentation of minority, female, veteran status and economically disadvantaged individuals in the highway construction trades through the assignment of OJT goals.

By providing on-the-job training, contractors will attract and retain more highly qualified employees and improve productivity and services.

The goals of the OJT Program are:

- To offer equal opportunity for the training and upgrading of minorities, female, veteran status and disadvantaged persons toward journey-level status in the highway construction trades.
- To improve the skills of the available workforce.



PARTICIPANT ASSESSMENT

Contractors will review prospective participants for work experience that will make desirable trainees. They will assess prospects who are interested in the OJT program as follows:

- Review Employment Application

ENTRANCE REQUIREMENTS

Applicants will meet the following minimum qualifications:

- The applicant must be a minimum of eighteen (18) years of age.
- The applicant must be physically capable of performing the essential functions of the OJT program, with or without a reasonable accommodation, and without posing a direct threat to the health and safety of the individual or others.
- Applicants are subject to random, post accident and reasonable suspension drug testing per company policy.
- No applicant will be accepted as a trainee in any classification for which eh/she has successfully completed, or in which eh or she has been gainfully employed.

EMPLOYEE ORIENTATION

The Training Coordinator will review the OJT Monthly Progress Reports. Each trainee will receive an orientation by a Project Manager and/or Supervisor. These meetings will include the following:

- The trainee will receive a copy of this manual, which includes the specific training program he/she is completing.
- The starting wage rate and the graduated pay scale of the trainee enrolled in the training program.
- The seasonality of construction work and the adverse weather conditions under which work may occur.
- The necessity that construction workers are punctual and willing to work extra hours in order to remain steadily employed.
- From time to time, the trainee may have an obligation to perform tasks not included in the training program outline.
- Qualities or traits the company considers desirable in its workers, including work ethics.
- Ways in which employees can earn a promotion within the company.
- EEO policy, Affirmative Action Plan, Complaint and Unlawful Harassment policies.
- Appropriate PPE (i.e. hard hat, safety vest, work boots etc.) for the project shall be worn at all times in compliance with “Company Policy”. Clothing should be applicable for the job environment.
- Basic hours of operation, overtime, weekend expectations.
- Whom the trainee will report to (primary supervisor); whom the trainee should call in case he/she will be tardy, absent from work or need to leave the worksite, specifically identifying the Company policies.
- Disciplinary procedures, termination, and layoff policies.
- Tool Box Talk participation.

SUPERVISION

The trainee will be assigned to a journey worker, supervisor, or other knowledgeable employee who will, on a daily and personal basis, direct, review, and observe the trainee.

TRAINEE AGREEMENT

Contractor must complete the OJT Trainee Agreement form for each trainee. Contractors shall submit the Trainee Agreement form to the BECO Office for approval.

Upon approval trainees are eligible to work on any job whether Federal, State or City, etc. and will be counted toward the trainees certificate of completion status..

Once the trainee begins the OJT Program, representative will submit certified payrolls through LCP Tracker if required.

BENEFITS

Employees subject to prevailing wages, the fringe benefits will be contributed into bona fide funds, plans or programs when applicable.

WORK HOURS

The normal workweek is to consist of eight (8) hours per day, five (5) days per week, or that which the journeyman in the craft is working. Additionally, a trainee is eligible to work overtime if the opportunity is presented.

TERMINATION FOR JUST CAUSE

The trainee may be terminated at any time during training. Some examples of termination are: absenteeism, lack of punctuality, accident-proneness, lack of interest, poor attitude, failure to demonstrate his/her ability to perform diligently and faithfully the work of the trade and other pertinent duties as assigned, or failure to conduct him/herself in a creditable, ethical, and moral manner.

As an employee, your participation in the OJT program is not intended and does not constitute a contract of continued employment between the contractor and yourself. In addition, employment with the contractor is "at will" and that either you or your employer may terminate employment at any time, and for any or no reason.

CERTIFICATE OF TRAINING PROGRAM COMPLETION

At the completion of each training level, the trainee will receive a Certificate as a record of his/her accomplishment issued by ADOT.

ON THE JOB TRAINING CLASSIFICATIONS

The OJT Program has been designed to provide training in the skilled construction trade classifications, and to insure the Trainee consistently receives the level and quality of training necessary to perform in their respective skilled trade classification. The training classifications are as follows:

TRAINING CLASSIFICATION	NUMBER OF TRAINING HOURS
Construction Carpenter Trainee	4,000
Construction Cement Mason Trainee	4,000
Construction Labor Trainee	1,000
Project Engineer Trainee	6,000
Equipment Operator Trainee	6,000
Mechanic / Equipment Services Trainee	6,000
Materials Laboratory Technician Trainee	1,000

The Trainee will perform a combination of tasks on construction projects as work requires under general supervision of a skilled construction worker.

A typical training program under this classification will consist of the following (as a minimum):

A. FAMILIARIZATION

- Safety
- Company Policies
- Materials Selection
- Power and Hand Tools

B. GENERAL CONSTRUCTION

- Safety
- Communication
- Curb and Gutter
- Catch Basins
- Sidewalk
- Drainage Structures
- SWPPP
- Pier, Pile and Cap Formwork
- Routine Cleaning and Maintenance of Area, Materials, Tools and Equipment
- Select Materials and Order
- Work with and/or Remove Hazardous Material



C. INTRODUCTION TO MEASURING TOOLS

- Mathematics for Construction
- Area and Volume Calculations
- Measuring Rules
- Chaining Tapes
- Elevation Rods
- Transits
- Levels
- Laser Aligner Measuring Elevations



D. FORM BUILDING AND ERECTION

- Safety
- Basic Form Design
- Construction of Forms
- Erection and Placement of Forms
- Stripping and Salvage of Forms for Reuse
- Box Culverts, Inlets and Headwall Formwork
- Decking Formwork
- Endwall Formwork
- Parapet and Hand Railing Formwork
- Bridge Falsework
- Shape or Cut Materials to Specified Measurements Using Hand Tools, Machines, or Power Saw

E. DEMOLITION

- Remove Damaged or Defective Parts or Sections of structures
- Repair, Remove or Replace Sections of Structures Using Hand Tools

F. STRUCTURAL CONCRETE

- Safety
- Concrete Materials

G. HOUSEKEEPING

- Safety
- General Housekeeping on the Project

H. TRAINING

- First-Aid/CPR
- OSHA – An Introduction
- OSHA 10
- OSHA 30
- Trenching and Site Excavation Safety
- Fall Protection
- MSDS/Hazmat
- Traffic Safety
- Jobsite Safety Orientation
- Personal Protective Equipment
- Heat Stress
- Work Zone Traffic Control
- General Housekeeping on the Project
- Power Tool Awareness
- Power Tool Use and Guarding
- Signs, Signals and Barricades
- Accident Prevention Heavy Construction
- Working Around Mobile Equipment
- How To Read A MSDS Sheet
- Employer/Employee Responsibility



CONSTRUCTION CARPENTER TRAINEE - FEDERAL FUNDED PROJECT

LEVEL 1 – 1,000 HOURS @60%	_____	+	_____	FRINGE	=	_____	WAGES
LEVEL 2 – 2,000 HOURS @70%	_____	+	_____	FRINGE	=	_____	WAGES
LEVEL 3 – 3,000 HOURS @80%	_____	+	_____	FRINGE	=	_____	WAGES
LEVEL 4 – 4,000 HOURS @90%	_____	+	_____	FRINGE	=	_____	WAGES

4,000 @ 100% OJT HOURS ACHIEVED. CERTIFICATE OF COMPLETION AWARDED.

The Trainee will learn and operate many types of construction equipment used on highway and bridge construction projects. The Trainee will perform a combination of tasks on bridge construction projects, usually working in a utility capacity.

A typical training program under this classification will consist of the following (as a minimum):

A. FAMILIARIZATION

- Safety
- Materials
- Tools/Equipment
- Public Relations

B. FORM BUILDING AND ERECTION

- Safety
- Basic Form Design
- Construction Forms
- Erection and Placement of Forms
- Placement of Reinforcing Steel

C. GENERAL CONSTRUCTION

- Screed and Form Setting
- Finishing/Flat Work
- Curb and Gutter Paving
- Grinding/Sacking/Patching
- Machine Operation Sets
- Setting Screeds to Line
- Use of Float and Trowel
- Use of Edger and Jointer
- Chipping of Concrete
- Patching of Concrete
- Rubbing and Brushing of Concrete
- Establishing Grade Lines and Heights
- Setting Expansion Joints
- Curb and Gutter Screeds
- Finishing of Curbs, Gutters, Sidewalks
- Laser or Transit
- Layout of Joints in Special Designs

D. INTRODUCTION TO MEASURING TOOLS

- Mathematics for Construction
- Area and Volume Calculations
- Measuring Rules
- Chaining Tapes
- Elevation Rods
- Transits
- Levels
- Laser Aligner Measuring Elevations

E. STRUCTURAL CONCRETE

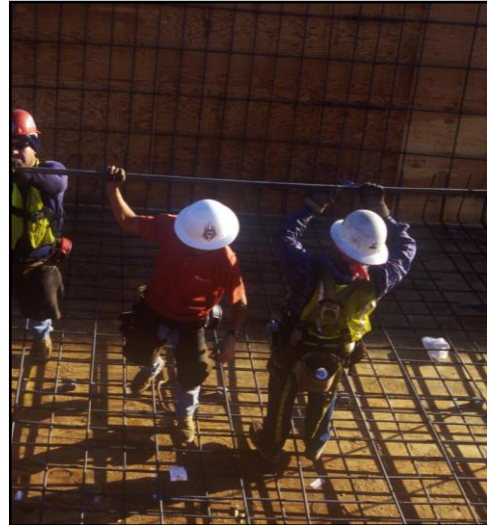
- Safety
- Concrete Materials
- Finishing Concrete/Pouring/Setting
- Patching Concrete
- Concrete Curing
- Bidwell Operation

F. TRAFFIC CONTROL

- Safety

G. STRIPPING/SALVAGE

- Safety
- Removal/Clearing of Materials



H. CONCRETE WORK

- Level Concrete
- Level with Laser or Transit
- Install Reinforcement



- Place Expansion Joints
- Construct and Set Screeds and Forms
- Form a Catch Basin
- Identify Types of Concrete Mix
- Cut, Repair and Resurface Concrete

I. CONCRETE DEMOLITION

- Safety
- Tools and Equipment
- Methods of Removal
- Protection of Surroundings

J. GIRDER ERECTION

- Safety
- Placement/Fastening
- Exposure to Pile Driving, Welding, Cutting, and Minimum Heavy Equipment Operation

K. HOUSE KEEPING

- Safety
- Materials – Equipment Maintenance
- General Housekeeping

L. TRAINING

- First-Aid/CPR
- OSHA – An Introduction
- OSHA 10
- OSHA 10 Road Course
- OSHA 30
- Employer/Employee Responsibility
- Fall Protection Awareness
- Fire Protection Awareness
- Portable Fire Extinguishers
- General Housekeeping on the Project
- Hazard Communication Awareness
- Jobsite Safety Orientation
- Ladder Safety Awareness
- Personal Protective Equipment
- Power Tool Awareness
- Scaffold Safety Awareness
- Soil Analysis and Classifications
- Trenching and Excavation Awareness
- Working Around Mobile Equipment
- 100% Fall Protection
- Accident Prevention Heavy Construction
- Demolition Hazards
- Emergency Action Response
- Fall Protection
- Fall Protection Equipment
- Heat Stress
- How to Read a MSDS
- Material Handling
- Noise and Hearing Protection
- Power Tool Use and Guarding
- Scaffold User Guides
- Sun and Other Outdoor Hazards
- Working Traffic Control
- Trenching and Excavation - Practical Applications
- Competent Person - Excavations
- Competent Person - Fall Protection
- Conduct Tailgate Meetings
- The Competent Person





CONSTRUCTION CEMENT MASON TRAINEE - FEDERAL FUNDED PROJECT

LEVEL 1 – 1,000 HOURS @60%	_____	+	_____	FRINGE	=	_____	WAGES
LEVEL 2 – 2,000 HOURS @70%	_____	+	_____	FRINGE	=	_____	WAGES
LEVEL 3 – 3,000 HOURS @80%	_____	+	_____	FRINGE	=	_____	WAGES
LEVEL 4 – 4,000 HOURS @90%	_____	+	_____	FRINGE	=	_____	WAGES

4,000 @ 100% OJT HOURS ACHIEVED. CERTIFICATE OF COMPLETION AWARDED



The OJT Trainee will perform a combination of tasks on construction projects, usually working in a utility capacity. Individuals will transfer from task to task, as work requires under general supervision of a skilled construction employee.

A typical training program under this classification will consist of the following (as a minimum):



A. FAMILIARIZATION

- Safety
- Company Policies/Procedures
- Personal Protective Equipment
- Right-of-Way Lines
- Alignment Stakes, Grade Stakes
- Boundary Markers, Bench Markers and Tie Points
- Tools/Equipment
- Project Set-Up
- Introduction and Observation of Routine Procedures

B. GENERAL CONSTRUCTION

- Safety
- Back Filling and Compaction
- Curb and Gutter
- Catch Basins
- Concrete Saw
- Demolition and/or Removal
- Drainage Structures
- Erosion Control
- Environmental Hazards
- Hands on Concrete Placement
- Gabions
- Grade Checking
- Hazard Communication Work Processes
- Personal Protective Equipment
- Raker
- Routine Cleaning and Maintenance of Area, Materials, Tools and Equipment
- Screed Checker
- Shoveler
- Tamper and Laser Operation
- Pipe Layer and Manhole Installer
- SWPPP
- Stockpiling and Maintaining Project Tools, Equipment and Materials
- Work Site Safety
- AC Dumpman
- Asphalt Laborer
- Asphalt Raker
- Asphalt Raker II
- Chain Saw
- Concrete/Asphalt Saw
- Concrete Cutting Torch
- Concrete Small Tools
- Concrete Vibrating Machine
- Dumpman Spotter
- Flagger
- General/Cleanup
- Guardrail Installer
- Hydraulic Jacks and similar tools
- Jackhammer and/or Pavement Breaker
- Landscape
- Landscape Sprinkler
- Pipe Layer
- Rigger and Signal Man
- Scaffold Builder
- Scaffold Laborer
- Scaler

- Scaler (Driller)
- Scissor Lift Operations
- Tamper (mechanical)
- Traffic Control
- Trencher – hand guided

C. INTRODUCTION TO MEASURING TOOLS

- Mathematics for Construction
- Area and Volume Calculations
- Measuring Rules
- Chaining Tapes
- Elevation Rods
- Transits
- Levels
- Laser Aligner Measuring Elevations

D. CONFINED SPACE ENTRY

- Hazard Recognition
- Entry Program
- Atmospheric Testing
- Controlling Atmospheric Hazards
- Personal Protective Equipment

E. AIR TOOL OPERATION

- Inspection and Maintenance of Tools and Equipment
- Construction Craft Laborer Air Compressor Operation
- Demonstration of Air Tools

F. SMALL GAS ENGINES

- Preventive Maintenance and Trouble Shooting
- Operation of Equipment

G. STRUCTURAL CONCRETE

- Safety
- Concrete Materials
- Concrete – Placing and Finishing

H. HIGHWAY WORK ZONE

- Flagger Safety
- Traffic Control Safety
- Worksite Safety
- Environmental Hazards and Hazard Communication Work Processes
- Personal Protective Equipment
- Federal and State Regulations
- Equipment Identification
- Use of Hand Signals and Signs
- Control of Traffic through the Project
- Control of Construction Equipment through the Project
- Installing/Removing Traffic Control Devices
- Emergency Procedures

I. STRIPPING/SALVAGE

- Safety
- Removal/Clearing of Materials
- Safety Check of Equipment

I. PIPE INSTALLATION

- Safety
- Excavation, Shoring and Placement of Material
- Handling Materials
- Fine Grading
- Back Filling and Compaction
- Back Injury Prevention
- Measuring Tools



- Locating Utilities
- Manhole/Catch Basin Construction
- Trenching and Excavation Safety
- Pressure Pipe Laying Techniques
- Gravity Flow Piping Systems
- Works with Supervisor in Learning and Performing all aspects of Craft to include but not limited to Laying all Types of Pipe Duct, Adjust Pipe to Line and Grade, and Sealing of Pipe Joints.
- Actual Use of Hand Level, Grade Line and Laser as Applicable.

J. HOUSE KEEPING

- Safety
- General Housekeeping on the Project

K. TRAINING

- First-Aid/CPR
- OSHA - An Introduction
- OSHA 10
- OSHA 10 Road Course
- OSHA 30
- Employer/Employee Responsibility
- Fall Protection Awareness
- Fire Protection Awareness
- Portable Fire Extinguishers
- General Housekeeping on the Project
- Hazard Communication Awareness
- Jobsite Safety Orientation
- Ladder Safety Awareness
- Personal Protective Equipment
- Power Tool Awareness
- Scaffold Safety Awareness
- Soil Analysis and Classifications
- Trenching and Excavation Awareness
- Working Around Mobile Equipment
- 100% Fall Protection
- Accident Prevention Heavy Construction
- Demolition Hazards
- Emergency Action Response
- Fall Protection
- Fall Protection Equipment
- Heat Stress
- How to Read a MSDS
- Material Handling
- Noise and Hearing Protection
- Power Tool Use and Guarding
- Scaffold User Guides
- Sun and Other Outdoor Hazards
- Working Traffic Control
- Trenching and Excavation - Practical Applications
- Competent Person - Excavations
- Competent Person - Fall Protection
- Conducting Tailgate Meetings
- The Competent Person



CONSTRUCTION LABORER - FEDERAL FUNDED PROJECT

LEVEL 1 – 500 HOURS @60%	_____	+	_____	FRINGE	=	_____	WAGES
LEVEL 2 – 500 HOURS @80%	_____	+	_____	FRINGE	=	_____	WAGES

1,000 @100% OJT HOURS ACHIEVED. CERTIFICATE OF COMPLETION AWARDED.

Individuals will be trained to act in a supervisory capacity coordinating activities of work crews on highway and/or bridge construction projects. The trainee will learn:

- Company policies and procedures
- Jobs and personnel function to gain knowledge of all phases of highway/bridge construction tools and processes including:
 - ✓ Project Plans and Specifications;
 - ✓ Topographical Maps and Surveying;
 - ✓ Scheduling; and
 - ✓ Programs and Regulations Governing Construction Activities.

A typical training program under this classification will consist of the following (as a minimum):

**A. FAMILIARIZATION**

- Safety
- Company Policies/Procedures
- Equipment/Material Usage and Maintenance
- Recordkeeping
- Review Plans and Specifications
- Statistical Safety Program
- Measuring Equipment Production
- Project Set-Up

B. RESPONSIBILITIES

- Scheduling of all Flag Personnel
- Employee Relations – Recognition and Motivation
- Conflict Resolution
- Public Relations
- Safety and First-Aid
- Weekly Project Audits
- Tool Box Talks Meeting
- Project Review of EEO Meeting
- Job Hazard Analysis
- Crew and Equipment Scheduling
- Review Subcontractors Contracts
- Review Subcontractors Insurance Certificates

- Project Documentation (Weekly Time Sheets, Equipment Time, etc.)

C. JOB KNOWLEDGE

- Safety
- Blueprint/Topographical Map/Layout Reading
- Use of Transit
- Planning and Layout of Field Office and Grounds
- Layout and Staking
- Site Preparation
- Ground Condition Analysis and Testing
- Excavation
- Drainage
- Pipe Culverts Planning and Installation
- Sub-Grade Preparation
- Fine Grading
- Erosion Control
- Placement of Paving - Concrete, Asphalt and Base Coarse
- Job Site Cleanup
- Traffic Control
- Contractor Quality Control/Quality Assurance
- Dust Control

D. FORM BUILDING AND ERECTION

- Safety
- Basic Form Design
- Construction Forms
- Erection and Placement of Forms
- Placement of Reinforcing Steel

E. STRUCTURAL CONCRETE



- Safety
- Concrete Materials
- Finishing Concrete – Pouring/Setting
- Patching Concrete
- Curing Concrete
- Bidwell Operation
- Form Work
- False Work

- Concrete Quality Control

F. STRIPPING/SALVAGE

- Safety
- Removal/Clearing of Materials
- Stacking Fundamentals

G. CONCRETE DEMOLITION

- Safety
- Tools and Equipment
- Methods of Removal
- Protection of Surroundings

H. GIRDER ERECTION

- Safety
- Placement/Fastening/Securing
- Exposure to Pile Driving, Welding, Cutting, and Minimum Heavy Equipment Operation

I. FAMILIARIZATION OF EQUIPMENT

- Safety
- Observation of Various Equipment
- Understanding Basic Function and Preparation of Equipment
- Understanding Use of Parts Catalog and Cost/Purchasing of Parts
- Learning Key Parts Required
- Learning Company Purchase, Receipts, Storage and Issuance Procedures

J. EQUIPMENT FUNCTIONS

- Safety
- Tool Care, Storage and Transportation
- Lubrication – Oil, Air and Fuel Filters, Grease Points – Inspection Techniques to Detect Abnormal Conditions
- Welding and Burning Equipment and Operation of Lathes, Saws, Shapers, Grinders and Presses
- Operation and Service of Fuel Systems
- Hydraulic Systems
- Electronic Systems
- Equipment Operations

K. APPLICATION OF EQUIPMENT TRAINING

- Preventive Maintenance – Shop and Field
- Corrective Maintenance – Shop and Field
- Order, Receive, and Store Tools and Equipment Under Supervision of Skilled Worker
- Draw, Arrange, and Transport Tools and Materials Under Supervision of Skilled Worker
- Participate in Equipment Preparation and Maintenance Under Supervision of Skilled Worker – Both in the Shop and Field Environments
- Use Tools of the Trade and Perform Related Duties as Required

L. TRAFFIC CONTROL FAMILIARIZATION

- Safety
- Learning Company Policies and Procedures
- Federal and State Regulations
- Proper Hand and Sign Signaling
- Public Relations
- Recordkeeping

M. CONTROL OF TRAFFIC

- Knowledge of Proper Equipment and Safe Signing
- Use of Radio Equipment

- Control of Construction Equipment Through Work Area
- Coordination of Activities with Proper Management and Supervisory Personnel
- Daily Start-Up and Shut-Down Involving Safety Equipment
- Maintenance of Adequate Level of Supplies for Daily Use

N. TRAFFIC SIGNAGE FAMILIARIZATION

- Types of Equipment and Materials
- Maintenance, Operation Limitations and Capabilities
- Fueling, Lubricating and Servicing
- Set-up

O. TRAFFIC CONTROL KNOWLEDGE

- Placing Concrete Barriers
- Safety and Operating Procedures
- Topographical Map Reading
- Planning and Layout Of Sign Packages
- Excavating, Drainage, and Pipe Laying
- Fence and Guardrail
- Compaction and Backfilling
- Fine Grading and Erosion Control
- Placement of Hot Mix Asphalt and Hot Mix Asphalt Curb
- Cold Planning and Reclaiming
- Removal of Permanent Construction Signs and Job Site Clean-up
- Temporary Pavement Markings

P. TRAINING

- EEO Policy
- AAP
- Sexual Harassment Training
- 30 Hour OSHA
- MSHA
- First-Aid/CPR
- SWPPP
- PPE
- Competent Person Trenching and Site Excavation
- Competent Person Fall Protection
- ATSSA Flagger Training
- ATSSA Supervisor Training



PROJECT ENGINEER TRAINEE - FEDERAL FUNDED PROJECT

LEVEL 1 – 1,000 HOURS @60%	_____	+	_____	FRINGE	=	_____	WAGES
LEVEL 2 – 2,000 HOURS @65%	_____	+	_____	FRINGE	=	_____	WAGES
LEVEL 3 – 3,000 HOURS @70%	_____	+	_____	FRINGE	=	_____	WAGES
LEVEL 4 – 4,000 HOURS @75%	_____	+	_____	FRINGE	=	_____	WAGES
LEVEL 3 – 5,000 HOURS @80%	_____	+	_____	FRINGE	=	_____	WAGES
LEVEL 4 – 6,000 HOURS @90%	_____	+	_____	FRINGE	=	_____	WAGES

6,000 @ 100% OJT HOURS ACHIEVED. CERTIFICATE OF COMPLETION AWARDED.

The function of this training program is to provide corridor for the unskilled worker to become part of the permanent workforce. The trainee will learn and operate many types of construction equipment used on highway and bridge construction projects. When this program is completed, the trainee will have achieved a journeyman status. Training and upgrading of minorities and women toward journeyman status is a primary objective of this program. The trainee will be working during the training period on various projects, private and public, Federal and Non-Federal. A typical training program under this classification will consist of the following (as a minimum):

A. FAMILIARIZATION

- Safety
- Fueling/Lubrication/Hydraulic Systems
- Operation of Equipment
- Operation and Maintenance Manual
- Vehicle Capabilities and Limitations
- Materials/Earth Work
- Site Preparation
- Dust Control

B. CONSTRUCTION BASICS

- Safety
- Operation and Maintenance Manual
- Load Charts
- Fueling/Lubrication/Hydraulic Systems
- Equipment Capabilities and Limitations
- Rolling (Compaction/Vibration)
- Trenching/Pipe Laying
- Cut and Fill Ground Elevation Variations
- Backfill/Curbing
- Rigging/Hoisting
- Common Grade Stake Terms and Placement
- Making Adjustments for Proper Depth, Grade and Finish
- Reading Survey Stakes and their Markings

**C. MOTOR GRADER**

- Operation and Maintenance Manual
- V-Ditching
- Side Slope Finishing
- Haul Road Grading
- Finish Grading
- Stockpiling
- Site Prep
- Site Clean-up
- Cutting/Leveling
- Accu Grade Equipment

D. DOZER

- Operation and Maintenance Manual
- Level/Straight Dozing
- Slot Dozing
- Backfilling
- Ripping
- V-Ditching
- Push Load Scrapers
- Tree Stump Removal
- Side Slope Dozing
- Trap Loading
- Slope Building – Up or Down
- Boulder Removal
- Finish Grading
- High Wall Dozing
- Ramp Building
- Stockpiling
- Site Prep
- Accu Grade Equipment
- Establish Drainage

- Push Feed in Pit Hopper
- Six Point Angle Blade Configuration

E. BACKHOE/GANNON LOADER

- Operation and Maintenance Manual
- Trenching
- Excavation
- Lifting
- Demolition
- Land Clearing
- Loading Trucks
- Back Filling
- Grading
- Finish Grading
- Finding Utilities
- Finish Straight Walls
- Concrete Removal
- Stockpile Material
- Site Prep
- Site Clean-up
- Cutting/Leveling
- Accu Grade Equipment
- Integrated Tools
 - ✓ Buckets - Standard and Multipurpose, Hammers, Augers, Rippers, Tampers, Rollers, Material Handling, Brooms, Rakes, Asphalt Cutters, Bale Spear, Thumb Attachment, E-Stick

F. EXCAVATOR

- Operation and Maintenance Manual
- Trenching
- Truck Loading-Bench/Same Level
- Lifting
- Backfill
- Towing
- Ramping
- Mass Excavation
- Demolition
- Forestry
- Mining
- Slope Work - Pulling/Building
- Finishing Straight Walls
- Accu Grade Equipment
- Thumb Attachment
- Pin Grabber Coupler-Bucket, Hammer, Pulverizer, Auger, Shears, Grapple, Magnet
- Wheel Roller, Tamping

G. LOADER

- Operation and Maintenance Manual
- Face Loading
- Various Types Of Truck Loading
- Load & Carry
- Dozing
- Backfilling
- Shading Pipe
- Trap Loading
- Stockpile Material
- Ramp Building
- Hopper Loading
- Screening Material
- Material Handling Attachments
- Land Clearing
- Payload Control System

H. ROLLER

- Operation And Maintenance Manual
- Site Prep
- Ramp Building
- Finish Grading
- Slope Building - Up And Down
- Backfilling
- Fill Compaction
- Landfill Construction
- Levee Construction



I. SCRAPERS

- Operation and Maintenance Manual
- Open Bowl, Auger, Elevating, Push-Pull
- Twin or Single Engine
- Aggregate Mining
- Airport Construction
- Canal Excavation
- Earthfill Dam Building
- Grading
- Highway Construction
- Irrigation System Work
- Land Leveling
- Levee Construction
- Over Burden Removal
- Pond Building
- Railroad Embankment Construction
- Ramp Building
- Reclamation
- Refuse Covering
- Site Prep
- Sloping
- Spoil Removal
- Stockpiling
- Stripping
- Terracing
- Fill Compaction
- Landfill Construction
- Landfill Closure
- Haul Road Maintenance
- Accu Grade Equipment, Laser and G.P.S.

J. OPERATION OF EQUIPMENT

- Safety
- Operation and Maintenance Manual



- Proper Cuts and Fills to the Grade Stakes
- Load Charts
- Grading
- Equipment Capabilities and Limitations
- Earth Moving
- Rolling (Compaction/Vibration)
- Trenching/Pipe Laying
- Backfill/Curbing
- Rigging/Hoisting
- Compaction
- Minor Repairs and Adjustments
- Making Adjustments for Proper Depth, Grade and Finish
- Equipment Fundamentals
- Rigging Hardware

K. HEAVY EQUIPMENT SAFETY

- Perform a Walk Around Inspection
- Mounting and Dismounting
- Safety Videos and Safe Operation of Equipment
- Operation and Maintenance Manual

L. MAINTENANCE

- Safety
- Operation and Maintenance Manual
- Maintenance of Equipment (Minor Repairs/Parts Replacement)
- Machine Cleanliness
- Performing Maintenance Safely
- Cleaning Vehicle, i.e. Windows, Lights, Cargo Area, Placing Proper Placard on Truck
- Checking and Adding Vehicle Fluid as Necessary
- Basic Fueling

M. TRAFFIC CONTROL

- Safety
- Traffic Control Plan
- Set Up of Lane Closure, Detours and Special Signs
- Public Traffic/Construction Traffic
- Regulations

N. PIPE INSTALLATION

- Pipe Laying
- Operate a Pipe Laser
- Rigging
- How to Recognize Different Types of Pipes and how to Properly Install Pipe
- Install Fittings, Valves, Manholes, Etc.



O. TRAINING – Supplemental

- Defensive Driving
 - Crane Safety Basics
 - First-Aid/CPR
 - Employer/Employee Responsibility
 - Fall Protection Awareness
 - Fire Protection Awareness
 - Portable Fire Extinguishers
 - General Housekeeping on the Project
 - Hazard Communication Awareness
 - Jobsite Safety Orientation
 - Ladder Safety Awareness
 - Personal Protective Equipment
 - Power Tool Awareness
 - Rigging
-
- Scaffold Safety Awareness
 - Soil Analysis and Classifications
 - Trenching and Excavation Awareness
 - Working Around Mobile Equipment
 - 100% Fall Protection
 - Accident Prevention Heavy Construction
 - Demolition Hazards
 - Emergency Action Response
 - Fall Protection
 - Fall Protection Equipment
 - Heat Stress
 - How to Read a MSDS
 - Material Handling
 - Noise and Hearing Protection
 - Operation and Maintenance Manual - Review
 - OSHA – An Introduction
 - OSHA 10
 - OSHA 10 Road Course
 - OSHA 30
 - Pre Test/Post Test
 - Power Tool Use and Guarding
 - Scaffold User Guides
 - Skills Lab
 - Task List
 - ✓ Start Up and Shut Down Procedures
 - ✓ Safety and Maintenance Inspections

- Sun and Other Outdoor Hazards
- Working Traffic Control
- Trenching and Excavation - Practical Applications
- Competent Person - Excavations
- Competent Person - Fall Protection
- Conducting Tailgate Meetings
- The Competent Person



EQUIPMENT OPERATOR TRAINEE - FEDERAL FUNDED PROJECT

LEVEL 1 – 1,000 HOURS @60%	_____	+	_____	FRINGE	=	_____	WAGES
LEVEL 2 – 2,000 HOURS @65%	_____	+	_____	FRINGE	=	_____	WAGES
LEVEL 3 – 3,000 HOURS @70%	_____	+	_____	FRINGE	=	_____	WAGES
LEVEL 4 – 4,000 HOURS @75%	_____	+	_____	FRINGE	=	_____	WAGES
LEVEL 3 – 5,000 HOURS @80%	_____	+	_____	FRINGE	=	_____	WAGES
LEVEL 4 – 6,000 HOURS @90%	_____	+	_____	FRINGE	=	_____	WAGES

6,000 OJT HOURS ACHIEVED. CERTIFICATE OF COMPLETION AWARDED

All contractors and work sites have their respective work site safety rules. They have their own traffic rules for on-site service or haul roads. As a new operator, you need to review these with your supervisor. Make sure you understand the signs and markings used on the jobsite, especially those relating to underground utilities. Scan the site for overhead danger areas. And ensure that you are aware of any clearance or weight limitations in areas you will be working.

The O&M Manual contains many warning sections for each machine on how the machine should or should not be used. An O&M Manual is provided with each machine. It is attached to the cab by a lanyard. The operator should become thoroughly familiar with its contents before initially operating the tractor. Often, this manual is stored in a pouch attached to the back of the seat.

A typical training program under this classification will consist of the following (as a minimum):

Analyzes malfunctions and repairs, rebuilds, and maintains construction equipment, such as cranes, power shovels, scrapers, paving machines, motor graders, trench-digging machines, conveyors, bulldozers, dredges, pumps, compressors and pneumatic tools. Operates and inspects machines or equipment to diagnose defects. Dismantles and reassembles equipment, using hoists and hand tools. Examines parts for damage or excessive wear, using micrometers and gauges. Replaces defective engines and subassemblies, such as transmissions. Tests overhauled equipment to ensure operating efficiency. Welds broken parts and structural members. May direct workers engaged in cleaning parts and assisting with assembly and disassembly of equipment. May repair, adjust, and maintain mining machinery, such as stripping and loading shovels, drilling and cutting machines, and continuous mining machines.

A. FAMILIARIZATION

- Identification of repair parts and replacing of stock
- Repair parts ordering
- Proper use of parts manual
- Safety

B. BASIC CARE AND MAINTENANCE

- Lubrication
- Cleaning
- Periodic maintenance

C. BRAKES (ALL TYPES)

- Air systems
- Hydraulic systems
- Mechanical systems

D. TRANSMISSIONS CLUTCHES AND CONVERTERS

- Wet clutches
- Dry clutches
- Single stage converters
- Multi-stage converters
- Automatic Transmission
- Hydrostatic Transmission
- Standard Transmission

E. FINAL DRIVES

- Differential
- Planetary

F. STEERING MECHANISMS

- Manual
- Power assisted
- Power

G. POWER CONTROL UNITS

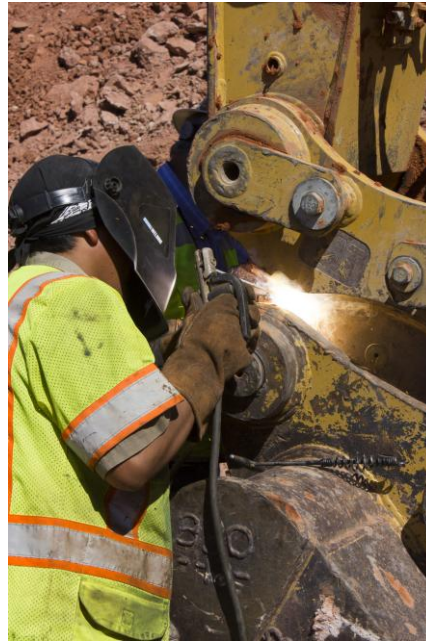
- Electrical
- Air
- Hydraulic

H. WINCHES

- Review O & M Manual

I. HYDRAULIC SYSTEMS

- Hoses
- Generating
- Lighting
- Ignition



J. ENGINE FUEL SYSTEMS

- Carburetor
- Injection

K. COOLING SYSTEMS

- Radiator
- Heat exchanger
- Hydraulic
- Air

L. ENGINE MAINTENANCE, REPAIR, AND REBUILD

- Gas
- Diesel
- Two cycle
- Four cycle

M. WELDING

- Electrical
- Gas

N. FIELD MAINTENANCE, GENERAL



MECHANIC/EQUIPMENT SERVICES TECHNICIAN TRAINEE - FEDERAL FUNDED PROJECT

LEVEL 1 – 1,000 HOURS @60%	_____	+	_____	FRINGE	=	_____	WAGES
LEVEL 2 – 2,000 HOURS @65%	_____	+	_____	FRINGE	=	_____	WAGES
LEVEL 3 – 3,000 HOURS @70%	_____	+	_____	FRINGE	=	_____	WAGES
LEVEL 4 – 4,000 HOURS @75%	_____	+	_____	FRINGE	=	_____	WAGES
LEVEL 3 – 5,000 HOURS @80%	_____	+	_____	FRINGE	=	_____	WAGES
LEVEL 4 – 6,000 HOURS @90%	_____	+	_____	FRINGE	=	_____	WAGES

6,000 @ 100% OJT HOURS ACHIEVED. CERTIFICATE OF COMPLETION AWARDED.

The function of this training program is to provide a corridor for the unskilled worker to become part of a contractors permanent workforce. The trainee will learn testing procedures for soils, hot mix asphalt, and concrete materials verifying ADOT and other Owner specifications on highway and bridge construction projects. When this program is completed, the trainee will have achieved a journeyman status. Training and upgrading of minorities and women toward journeyman status is a primary objective of this program. The trainee will be working for the Contractor during the training period on various projects, private and public, Federal and Non-Federal. A typical training program under this classification will consist of the following (as a minimum):

- A. FAMILIARIZATION**
 - Safety Procedures
- B. GENERAL CONSTRUCTION**
 - Assist technicians on site
 - Observe Senior Certified Materials Technician
- C. READING & UNDERSTANDING SPECIFICATIONS**
 - Observe & understanding of plans & specs
 - Understand mix designs submitted
- D. OBSERVE SENIOR CERTIFIED MATERIALS TECH**
 - Maintenance & Calibration of laboratory equipment
 - Correct sampling & testing procedures (key procedures)
- E. ACTUAL OPERATION**
 - Perform random sampling in the field
 - Prepare samples for testing
 - Test sample materials in accordance with specifications & key elements
 - Properly document sample results
 - Application of results
 - Prepare field charts
- F. TRAINING/CERTIFICATIONS**
 - Successful completion of 24 hour certification class
 - Successful completion of 16 hour SOIL certification
 - Successful completion of 16 hour HMA certification
 - 8 Hour Concrete Field Certification Class
 - 8 hour Concrete Laboratory Certification Class


MATERIAL LABORATORY TECHNICIAN - FEDERAL FUNDED PROJECT

LEVEL 1 – 500 HOURS @60%	_____	+	_____	FRINGE	=	_____	WAGES
LEVEL 2 – 500 HOURS @80%	_____	+	_____	FRINGE	=	_____	WAGES

1,000 @100% OJT HOURS ACHIEVED. CERTIFICATE OF COMPLETION AWARDED.